

THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

August 2001

Flying Off the Handle

200 Feet From
Disaster

HIGH NOON WITH A
SECTION OF TALONS



approach

The Naval Safety Center's Aviation Magazine

August 2001 Volume 46 No. 08

On the Cover The tailhook of a FA-18 just before catching the wire. Photo by PH3 Mike Larson. Modified by Allan Amen

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LCdr. Stephen Fimple, VS-21

Lt. Scott Downey, VFA-86

Lt. Scott Propst, VAQ-134

Lt. Leah Nelson, HSL-45

Lt. Rob Byers, HSL-48

AMS1 Richard Wood, VQ-3



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Flying Off the Handle

by Lt. John Smolen

New to HC-2's "Desert Duck" UH-3H detachment in Bahrain, I was part of a CAG run for a personnel, mail, and cargo transfer to a couple small boys. With luck, we'd be back at the pool-deck by noon. I sat left seat with my OinC as pilot-in-command (PIC). Our first hit was to a forward-deployed ship, which had an H-46 det embarked.

We ran through the routine, got a sweet lock, and proceeded inbound on the "see you." I frantically scoured the NATOPS, trying to grab a reference for wind limits, while the PIC flew us toward the boat, talking me through her thought process. It was my first SLQ to this platform.

Tower called back, "Desert Duck Seven-Four-Zero, winds seventy degrees to starboard, you have a green deck." My boss requested the full spiel, as a red flag raised itself in her head. She flew in and took a closer look to both educate me and to check out the flight deck with such a wide wind envelope.


The flight deck was staged port side, wrapped all the way around aft across the centerline of the ship. The hangar doors were open. Because of the angled deck and because the ship was staged as it was, we only could fly starboard to port. The PIC called for them to

change their PIM and close their hangar doors. I asked a million questions—the pubs and boards hadn't prepared me for this situation.

We rolled final, I checked the lights, and she made the calls. I waved to indicate the other seat had the controls, and we began the approach. On final, I remarked that lots of flight-deck personnel weren't wearing the PPE you'd expect for a ship at flight quarters. As our main mounts crossed over the deck, I saw a long piece of plastic package strapping fly over my head into the rotors. I relayed this to the pilot, and she muttered that this wasn't the best of circumstances. Tower confirmed that something had been sucked into our rotors.


Several things hadn't entered my train of thought yet. My initial concern was that the plastic could impair some of the flight controls, melt and clog a servo or some other piece of equipment, and thereby make taking off, let alone flying, an iffy proposition. My HAC's thought process fanned out a bit wider into FOD, something I thought was reserved for a red-eyed walkdown first thing in the morning. Our crew chief was thinking along the same lines.

We elected to shut down (yes, I know, never shut down on a ship that you don't want to sleep on). The aircrew tackled the business at hand of



unloading and escorting the PMC load and investigating the rotor head upon shutdown. I expected my HAC to fly off the handle at the ship, the LSE, or me for not waving her off, but she didn't. The lesson learned here is never to second-guess the inclination to call a waveoff, especially in a critical flight regime. I'd thought about it but decided against it because she didn't seem startled by the incident. Wrong! She didn't seem startled because she was keeping her head. That was important—flying off the handle, as my parents used to say, was “closing the barn door after the cow has wandered off.” Control the things and people who can make the remainder of the situation more palatable. Losing your temper can break down ACT and make an already bad situation worse.

The flight-deck personnel wandered about the flight deck and conducted a critically late FOD walkdown. The crew chief inspected the rotor head and found that the plastic pieces had flown off during disengagement and were not in the rotor head or anywhere within the airframe. I broke out the checklist for engagement, and we spun up. The LSE began to talk to another crew member. I noticed after the walkdown that they had neglected to remove or secure a box directly in front of our nose. Our crew chief had to unstrap, climb out, get the LSE's attention, and remove the box.

We were given a green deck and lifted for a HOGE check. Under LSE and crewman direction, we slid right, only to have yet another piece of plastic fly up into the rotors, then to be batted down and into the ship's wake. We transitioned, sucked up the gear, and reported, “Ops normal.” My HAC's parting words to the tower were, “You guys are a mess!” My H2P brain was busy absorbing lessons for later when I'm the HAC encountering a mess. 

Lt. Smolen flies with HC-2.

As our main mounts crossed over the deck, I saw a long piece of plastic package strapping fly over my head into the rotors.

Flying Off the Handle

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Lt. Smolen flies with HC-2.

As our main mounts crossed over the deck, I saw a long piece of plastic package strapping fly over my head into the rotors.

by LCdr. Tim Wilson

Showing up at your new squadron is always exciting. For me, this was especially true, because it was my first deployment and our Hawkeyes were flying combat missions in support of Operation Allied Force.


My first few weeks at the squadron consisted of trying to assimilate information about air-wing flight operations and the recent mission of E-2 crews (airborne battlefield command and control center). Battlefield management is not a task that the Hawkeye was specifically designed for. To monitor all the necessary radios, it takes the entire crew (including the two pilots) to work together, using eight

radios. For me, most of this training was OJT, which led to a near-midair near Serbia.

We had launched 15 minutes prior to the rest of the strike package and proceeded to our station at our fragged altitude. While on station, the pilot was tasked with transcribing flight reports from the strike aircraft and passing them on to the combined air operations center. The copilot was monitoring the EW threat net, which reports air and emitter activity in the region.

About halfway through our cycle, the radio transmissions increased as the friendlies went in-country. The copilot and I had to temper our lookout doctrine while accurately copying and forwarding the information on the two nets. This task may seem trivial until you realize that the radio calls (made by a Frenchman in broken English) were about SAM activity in the same area where your shipmates were flying. Consequently, our scan shifted to copying and relaying the information to the controllers in back.

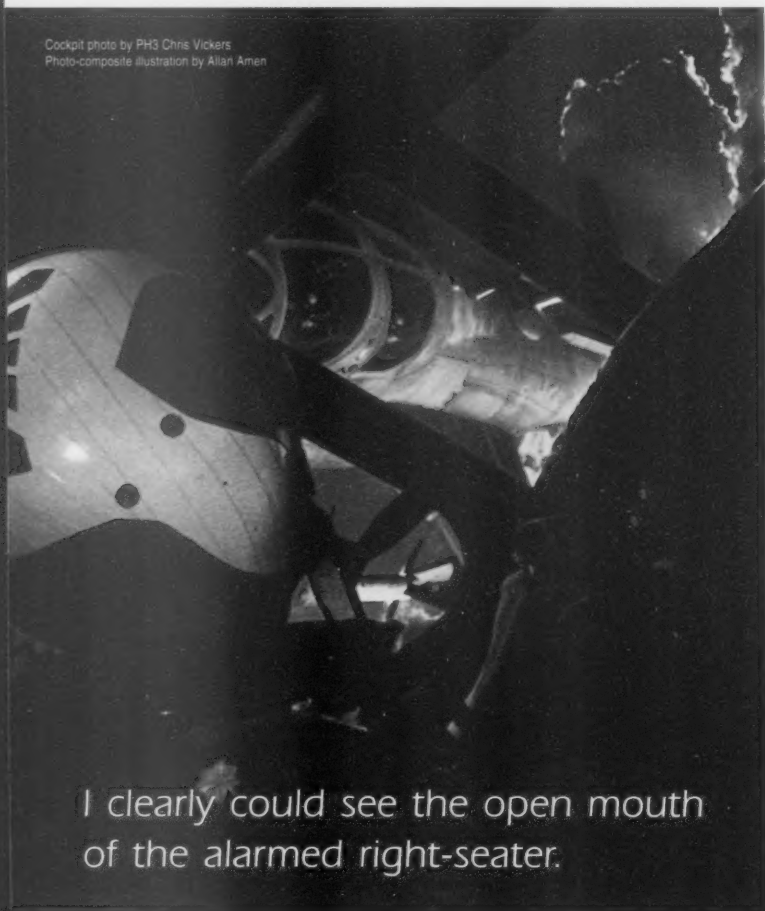
On this particular event, I was taking down the five-line, in-flight reports from an A-10 who seemed to have his piper on half of the targets in the region. The copilot was working the EW picture. I noticed a glint from behind the windscreen brace at the 10 o'clock position, and, as I looked up, I saw a Prowler about 800 feet away, level with us and slowly banking left. I tried to roll into the Prowler as he crossed my nose in a left-to-left pass close enough to fill our entire forward windscreen. I could clearly see the open mouth of the alarmed right-seater. I told the pilot-in-command about what just had occurred. Thirty seconds later, someone called us on the radio. I immediately responded with an unprofessional, "Yeah, I saw you at the last second!" Neither crew was happy that the altitude deconfliction in our air-tasking order hadn't worked, and that we had become so preoccupied that we missed seeing each other until the last second.

Being the new guy, I had found it easy to become overtaken. But was it just a simple case of not looking outside? Do you think this couldn't happen to you because your situational awareness would have been better than mine? Be careful—at the time, both the pilot and copilot were engaged in transcribing and passing critical information. Situational awareness balances on your ability to execute mundane tasks while continuing to respond to the changing environment around you. When 40 hours of flight time in a week and a candy bar for breakfast change your SA, you might just find yourself beak-to-beak, too. 

LCdr. Wilson flew with VAW-124.

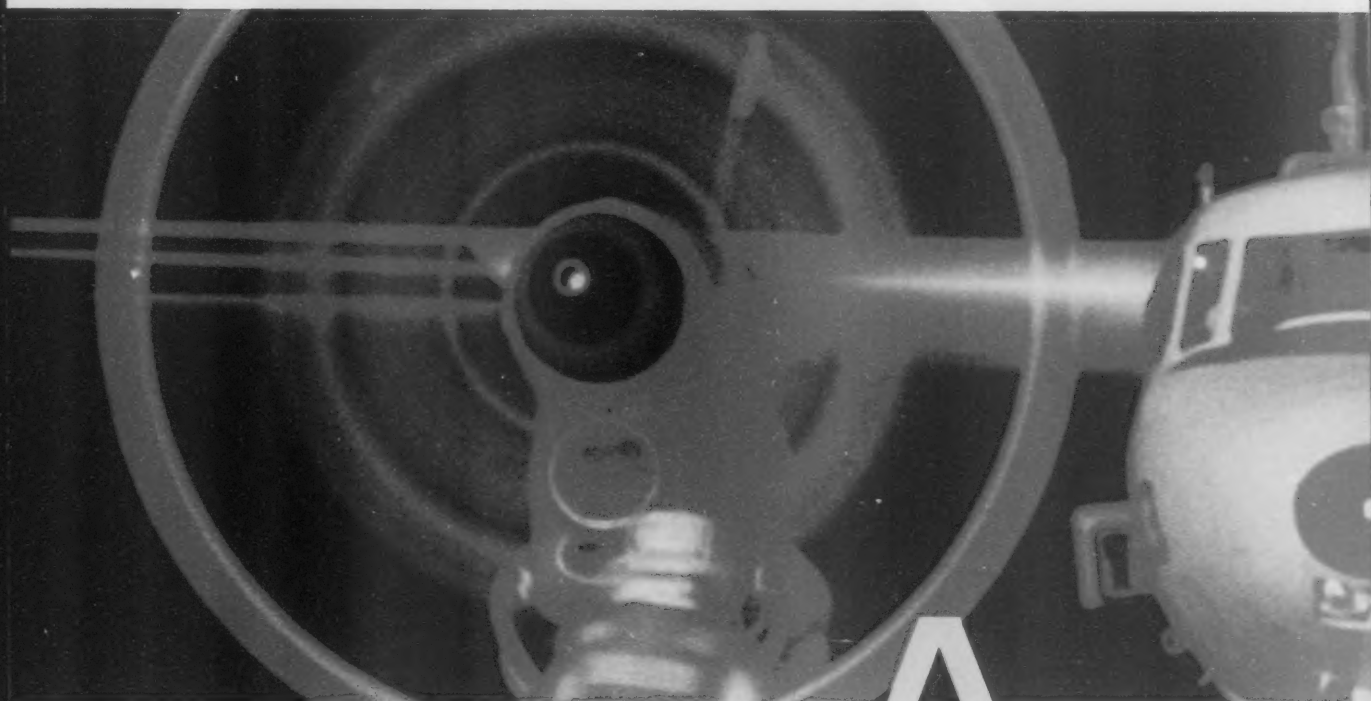
BEAK *to* BEAK

Cockpit photo by PH3 Chris Vickers
Photo-composite illustration by Allan Amen



I clearly could see the open mouth of the alarmed right-seater.

“What Do You Mean, the Engines Won’t Shut Down?”



by Lt. Bill Selk and Lt. John DiGiovacchino

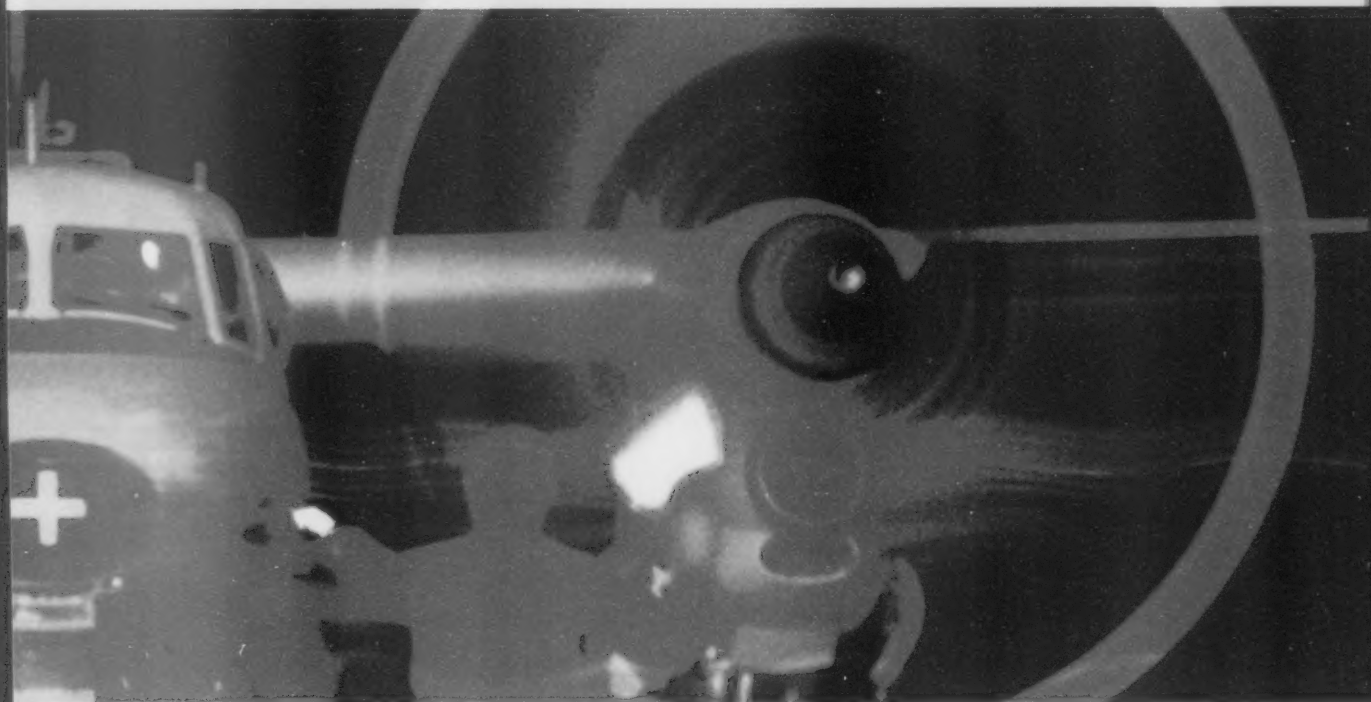
There is no emergency procedure for a failed air-ground safety switch.

After a successful weapons det at NAS Fallon, Black Eagle 603 was returning on an evening flight to NAS Point Mugu. Everyone had worked hard at Fallon, and everyone was eager to return home for a few weeks before RIMPAC. This aircraft had been one of our primary players at Fallon, a good plane with a great system.

The flight home was uneventful, and 603 was the last plane to return, arriving an hour or so after dark. The NAS Point Mugu air show was being held that weekend, so after an uneventful approach and landing, we taxied off the runway and headed for the Air National Guard side of base, where our aircraft would be parked for the weekend. The

crew completed the shutdown checklist and put the engines into low-speed ground idle (E-2C+ engines must run for two minutes at that speed to prevent problems with the fuel nozzles and consequent turbine damage). After those two minutes, you move the condition levers to a ground stop position, which, via a weight-on-wheels switch, shuts the fuel-control-shutoff valve electrically,

There is no emergency procedure for a failed air-ground safety switch. NATOPS says moving the condition lever toward the feather position mechanically and electrically closes the engine fuel-control-shutoff valve and feathers the prop once the feather position is reached. We didn't want to feather the prop if we didn't have to, assuming it would stress the engine and



cutting fuel flow to the engine without feathering the propellers.

That's what is supposed to happen, anyway. In our case, the pilot and the copilot were staring at each other, each with a hand on a condition lever in the ground stop position, and both engines still humming away. After a couple of blank stares, a few exchanges between the front and back end ("Did you cut the engines?"), and cycling the condition levers between run and ground stop, we quickly surmised that we had a bad air-ground safety switch. "Not a big deal," I thought from the RO's seat. "They'll just pull the T-handles, and we'll be good to go." We were home and wanted out of the aircraft.

gearbox. We decided to "fuel chop" the engine by moving the condition lever to the point where the fuel shutoff valve closed, yet didn't fully feather the prop; in other words, an improvised ground stop.

This is where it gets even trickier. We couldn't do this to both engines because a mechanical interlock prevents moving both condition levers to feather. The other option was to use the T-handles that secured the fuel-supply and control-shutoff valves, as well as the hydraulic gate valve. However, our hydraulic emergency generator would immediately cease to provide power once the T-handles were pulled. We'd lose our ICS and have no way of

talking between the front and back end if anything happened during shutdown. The aircraft's fire-extinguishing system also would not be available after we lost electrical power.

We discussed our options and decided to fuel chop the left engine, letting it wind down (and more importantly, keeping the emergency generator online), and then use the T-handle on the right. Unbeknownst to us, when we fuel chopped the left engine, the fuel-control-shutoff valve on the left engine never fully closed, thereby letting a slow trickle of fuel pour into the hot turbine.

The plane captain gave the pilots the lazy-eight signal almost immediately after shutting down the right engine. There was no way for the pilots to tell the NFOs, still in the back of the aircraft, what was going on, because of the loss of emergency-generator electrical power and ICS. The NFOs began a normal exit of the aircraft; the ACO moved into the aft equipment compartment to begin untying the crew's luggage. I went forward to the main-entrance hatch, which was opened by the ground crew almost as soon as I reached it. It was unusual, but I didn't think anything of it. I figured the ground crew probably was anxious to go home as well. As I exited the aircraft, I noticed a PC manning the fire bottle by the tailpipe of the

again but continued to re-flash. At this point, I realized the severity of the situation. The ground crew went to get another fire bottle, so the copilot and I stood clear of the aircraft, while the CICO manned the fire bottle. The plane commander went back into the aircraft and cycled the fluid-cutoff handles and moved the left condition lever to full feather. His actions caused the mechanical link finally to close the fuel-control-shutoff valve, stopping the flow of fuel. The CICO banged on the side of the aircraft, trying to get the attention of the ACO, who was still in the aft equipment compartment. The crash crew arrived a few minutes later. They manned the re-flash watch, and everything was once again under control.

We learned some big lessons. Lacking a NATOPS emergency procedure, we had to rely on our systems knowledge to remedy the situation—one more reason to stay in the books. We chose not to feather the left engine because we didn't want to put unnecessary stress on the engine and gearbox. In retrospect, we shouldn't have worried about that (the stress is minimal at best). We should have put the condition lever all the way to feather.


We spend a lot of time briefing crew coordination for emergencies and missions. Most of the

time, we assume that ICS will be available, or that the other crew members will be expecting and looking for our

Unbeknownst to us, when we fuel chopped the left engine, the fuel-control shutoff valve on the left engine never fully closed, thereby letting a slow trickle of fuel pour into the hot turbine.

left engine. He already had extinguished a small fire with a quick douse from the Halon bottle. Now there was a small flash, which he quickly put out. I figured a little residual fuel had flashed, and it wasn't a big deal. I'd seen tailpipe fires before, and it looked like everything was under control. What I didn't know was that a steady stream of fuel still was leaking into the hot turbine.

The tailpipe fire flashed again as the CICO exited the aircraft. He was followed quickly by the pilot and the copilot. The fire was put out

non-verbal signals. In a case like this, there were no prebriefed signals, and no one was expecting or looking for them. The ACO didn't know about the fire until the crash crew arrived, which could have been disastrous in other circumstances. Something as simple as a lazy figure eight from the ground crew when I exited the plane, or from the pilots as they headed aft to the main-entrance hatch, could have alerted the entire crew as to what was going on. 

Lt. Selk and Lt. DiGiovacchino fly with VAW-113.

200 Feet From Disaster

by Lt. Lawrence Reay

I was fresh out of the RAG and had been in my squadron less than two months. The op tempo had been slow, but things were spooling up for our spring cruise. Being a new COTAC with 60 hours in type made me eager to join the fold of our squadron.

I was the only nugget in a two-plane crew of experienced aviators. My left-seater was a mission commander and a senior officer in the command. We briefed a night-section hop that would include some SSC at the tail end. Great! At the RAG, everything was canned and predictable, so I thought it would be nice to throw a real-world twist into the mix.

The weather wasn't perfect, but I quickly was learning that what had been a showstopper in the RAG was daily business in the fleet. We suited up and proceeded to the op area. We started with some standard, night-section maneuvers that were no big deal. Then our sense of comfort nearly killed us.

Photo-composite by Allan Amen

"Let's work down lower to get under this layer," lead called over the radio. We previously had contacted one of our ships in the area and planned to fly an attack profile on them. Lead looked for a hole to see if we could descend under the layer and proceed VMC at 1,500 feet. We took a loose cruise position as the maneuvering became more dynamic, and we pushed through what appeared to be a thin layer.

Descending through 2,500 feet, my level of comfort began dropping. I attributed my fear to my lack of experience. I trusted the pilot and vigilantly hawked my instruments. As we passed 2,000 feet, we were in a turn away for separation. My left-seater was focused on the lead and radioed, "I think you should level out. You look low."

They responded, "We're level at fifteen hundred."

Things got surreal as I digested what my instruments were saying. We were descending through 1,300 feet, in a 45-degree angle of bank, and we had a meaty 2,500-fpm rate of descent on the jet. I feigned a cool response to an increasingly deadly situation and calmly told the pilot to pull up. As we passed through 1,000 feet, my concern turned into fear. "Pull up," I said again, but still not with the urgency one would expect from someone in a plane that would crash in about 10 seconds.

There was still no response from the pilot; he was completely focused outside, trying to understand the geometry of the situation. Finally, as we were passing through 500 feet, I yelled, "Pull up!" and reached for the ejection handle. I couldn't believe what was happening and how quickly the situation had turned sour. I was about to pull the handle when I felt a reassuring snap on the jet and


positive G's, indicating the pilot had initiated recovery. Just before getting a positive rate of climb, I saw 200 feet on the RADALT. We climbed to 10,000 feet. The silence in the cockpit was overwhelming.

It turned out the pilot had vertigo during the descent and thought he was straight and level while he was sliding back into a trail position. The dark-

Things got surreal as I digested what my instruments were saying.

ness and lack of horizon led him to perceive that the lead was the one descending, not us. He was so focused on keeping sight of the lead that he had stopped cross-checking his instruments.

I learned more that night about flying than in all of flight school. First, the notion that anything in aviation is a canned event is nonsense. Expectations can lead to disappointment, and in the air, they can be deadly. The chain of events that evening could have been avoided with an increased awareness of risk and the dynamic nature of flight. Furthermore, the combination of crew members in the cockpit introduced a level of risk that was not addressed until after the incident. As we've heard a hundred times, seniority coupled with inexperience can lead to a lack of assertiveness from the less experienced person. Nuggets die just as easily as mission commanders. As part of the aircrew, everyone is responsible for speaking up when things don't look right. Nobody should ever assume that the other guy is in control.

I was thankful I didn't end up in the water that night. Flight training doesn't stop after the RAG. 

Lt. Reay flies with VS-21.

was enjoying a post-debrief PB-and-J in the dirty shirt, when I heard the bad news. CVW-1 had just completed its last air-wing strike at the end of a challenging COMPTUEX-JTFEX. The flyoff was scheduled for early the next morning, and I was looking forward to being feet-dry in CONUS after seven weeks at sea.

My diligent Ops O hunted me down and said, "Have I got a good deal for you..." The powers-that-be had decided that our air wing hadn't been stressed enough, and that another strike, to be scheduled on the morning of the flyoff (a Sunday, of all things), was in order. I was the lucky JO assigned the lead. "Another opportunity to excel," declared my boss.

Of all the dumb luck. But no sense complaining about it, I thought. Might as well spread the wealth and start tasking those scheduled for the strike; maybe we could all manage to get into our racks at a reasonable hour. The CAG staffers issued the

began calling ready rooms trying to nail down the lineup. One duty petty officer commented to me, "Sir, it's 3 a.m. We won't expect any pilots in here until about 8." Three a.m.? Where had the time gone? The brief was at 0700, and I had a decision to make. I could say that I was done planning and head off for a few hours of shuteye. Or, I could pull the dreaded all-nighter, get a shower and a shave, and a bite to eat before the brief. Thinking that I would wind up feeling more tired after the short nap than before, I opted to stay up and apply some polish to CVW-1's final hoorah off the Carolina coast.

The brief went without a hitch, and the flight, delayed an hour because of the lack of a plane-guard helo, also went as advertised. The picture presented by the red-air forces made absolutely certain that we would be busy in our jets. It was a hazy day. Multiple groups of bogeys and bandits waited for us on our route and in the target area, keeping all of us awake. The slow-movers executed

Welcome to the Land of NOD

by Lt. Anthony Breyer

targets, and I assigned the fighter lead to fellow LSO bud. The two of us came up with the plan, then began sweating the small stuff. At midnight, the fighter lead binged to his stateroom, and I began crunching the kneeboard cards. I realized that I needed to borrow a bigger ready room, as the total body count on the strike had risen from eight motivated warriors to a whopping 24. No room for that many warm bodies in Ready Nine on the JFK.

Our fighter squadron's ready room was empty, so I commandeered it and began putting up the board. Formation and flow snapshots complete. I

the mission and then headed home, and the pointy-nosed jets went back to mom for Case III straight-ins. After a quickie CVIC debrief, we all scattered to pack and be on our way.

I was dragging. It was now 1100, and I had been awake since 0800 the previous day. For about a nanosecond, my brain entertained the thought of giving my flyoff seat to a junior JO, then I thought about all of the wonderful pilot-relief modes in the Hornet and the ribeye and beer I had left for myself in the fridge at home. I wanted to go home.

After yet another uneventful man-up, launch and three-plane rendezvous, fatigue began to set in. I felt euphoric whenever I allowed my eyes to close for a moment. Soon, those moments began to last ever so slightly longer. I found myself awakening, in formation, not having remembered when I had shut my eyes. "Don't do that again," I thought to myself. What I would have given for a stick of gum or a radio station to listen to or a thumb tack to stick in my thigh—anything to help stay awake. I began pumping up the G suit and turning on the a.c. full blast, trying to find ways to turn my jet into a 30-million-dollar entertainment center. I recall

snapping alert two more times during that trip home, each time flying right where I needed to be. Fortunately, we were trucking home at mil minus nothing, and 40 minutes later, we were overhead sunny Jacksonville in the break.

Ever seen that picture of the biplane engorged on a tree? The caption reads, in effect, that flying is not dangerous in and of itself, but it is unforgiving of mistakes. On that day, my judgment was clouded by both fatigue and pressure to get the job done. I flew twice that day, flagrantly violating crew-rest regulations on both occasions. Fortunately, for my shipmates and myself, the worst mistake I made was deciding to fly in the first place, rather than drifting into a wingman or into the Atlantic, semi-conscious at the wheel. ☐

Lt. Breyer flies with VFA-86.



Cockpit photo by Mike Silva
Photo-composite illustration by Allan Amen

...there's a difference
between the operating
procedures for East and
West Coast squadrons

When I transferred from HSL-51 in Atsugi, Japan, to a new command, I felt more than ready for my second tour in a LAMPS squadron. I had more than 1,000 hours in the SH-60B and had been redesignated as an assistant NATOPS instructor before I transferred. After two months in the squadron, still getting oriented, I became a junior crewman after one of the crewmen went down for medical reasons. I'd like to think that I volunteered for the counter-drug ops, but it really was more a case of sending the new guy. I thought it would be another cruise like all the rest. I didn't realize there's a difference between the operating procedures for East and West Coast squadrons, but I was about to find out quickly.

As usual, we started the cruise with the monotonous tasks of updating all of our quals. The DLQ period started without a flaw, comms were good, TACAN was up, and everyone knew what was going on. On our first approach to the boat, I reviewed my before-landing checklist and was all set for the ride.

I heard the call, "over the deck edge," and watched through the cargo-hook hatch as we came up over the rapid securing device (RSD). I

SHOW ME WHERE IT SAYS THAT

by AW1 (AW) Mark Compton

sat back and listened to the forward and aft calls from the pilot. I didn't hear anything from the LSO. At HSL-51, the LSOs did all the conning into the trap, all the way down to the deck. That wasn't the case here, but as the new guy, I didn't want to ask questions, just watch and learn.

The MO called and told me he was ready to land. I thought, "Why is he telling me? Tell the LSO." I rogered up and waited for him to land.

He asked, "How do we look? Can we land?"

"Yeah, sure, go ahead and land," I said. "It looks good." I still didn't understand why he had insisted on asking me. We landed, took off for another approach, and nothing was said about what had happened. On the next approach, the MO again told me to call closure for him, something I never had done in my previous squadron. He had to refresh my memory on calculating closure. No big deal—I called altitude and closure for the approach.

Again I heard "over the deck edge," and I rogered up, expecting the LSO to give the forward and aft calls. Nothing again. Then the MO jumped all over my case about using "NATOPS terminology" when I'm conning them in as opposed to "looks good" and "yeah, go ahead and land." By now, I was confused and irritated, because I know you don't find calls by the SO over the trap anywhere in NATOPS. The LSO always is tasked

with the conning. I ended up giving him the calls into the RSD, and once we landed, the conversation quickly evolved into a heated argument. Convinced that I should use NATOPS terminology, the MO argued his point. I asked him to show me the NATOPS section for ICS terminology by the SO in conning over the trap. He couldn't.

We debriefed the flight and discussed this complete breakdown of ACT skills and the differences of flying East Coast and West Coast style. Later, I discovered that most East Coast squadrons have the SO do the conning. But have you ever tried doing the conning from the rear, keeping the RAST probe's position in sight, while still remaining in a crash position over the deck? Crewmen have asked that question many times. Most of them will say you have to unlock your inertia reel and lean over to the side to see down the cargo hole, hardly a good crash position.

I raised these points during our debrief, and we discussed them at length. I learned that even though I was the new guy at the squadron, I needed to be more assertive. Not knowing the differences in how the squadrons operate was a setback for me, but we identified some valuable lessons to help pilots and junior crewmen know what to expect. We agreed that during the final approach to the back of the ship is no time for confusion. ☸

AW1(AW) Compton flew with HSL-48.

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High Noon with a Section of Talons

by Lt. Michael Garrick

I n July 1997, I was halfway through the advanced syllabus at Kingsville. Just when I thought I was going to be stuck doing all my low-level flights in southern Texas, I managed to get a cross-country to an airshow up north. On leg two of the three-leg return trip to Texas, my instructor and I planned to launch out of Tulsa International and fly the VR 1140 on the way to NAS Dallas. The weather-guessers had forecast thunderstorms west of the route, but the weather picture looked workable, so we decided to press.

Just before walking to the jet, I called the scheduling activity, 90th Flying Training Squadron at Sheppard AFB, to confirm that we still had

the route scheduled. The voice on the other end of the line gave me the OK when I asked him if he had our Blazer callsign on file.

We took off and headed west-southwest to point B on the route. As expected, ATC had to vector us around some cells on the way to the alternate entry point, but we managed to get to VMC. After making the call to Flight Service, I descended to 500 feet and accelerated to 360 knots (the airspeed we had briefed for the route). As we were fat on gas (a rare circumstance in the Goshawk), my instructor told me I could push up the airspeed from the IP to the target, provided my timing looked good.

The route was hardly spectacular, but it was still more scenic than anything around Kingsville. They said



Ted Carlson

that even a blind squirrel finds a nut, and, as we crossed over the lake at point G, it seemed that I somehow had managed to stick close to the timing. Anticipating the call from the backseat, I pushed the throttle to the max stop for the last leg. Out of the nearly 90-degree turn, I scanned the instruments and trimmed out the airplane. I was about to report my instruments to the instructor, when I noticed a black spot up ahead on our altitude. In the blink of an eye, the spot became two aircraft flying a tight combat spread. By the time I consciously realized we were beak-to-beak with the section, I already had bunted the nose.

As we split the formation down the middle I recognized them as T-38s. The RADALT, which was set at 450 feet, now was blaring in my ear. My instructor, who had been quiet to this point, was screaming at me on the ICS. "What the \$%*# are you doing?" he demanded.

"Didn't you see those two T-38s?" I replied, as I climbed to the top of the block and started to slow down.

A long silence ensued, followed by, "What T-38s?"

As I explained to him what had happened, I could sense his mounting anger. Still in shock from the near-miss but no worse for wear, we recovered uneventfully to NAS Dallas. My instructor's first call was to the command where the T-38s had come from, the 80th Flying Training Wing at Sheppard AFB. I wasn't in the room when he called, but I could hear him all the way down the hall in flight planning. As it turned out, a foreign squadron temporarily was using the number listed for the scheduling activity in the AP/IB. The guy I had talked to spoke English well, but he hadn't had a clue about scheduling the low level—he just had faked it. The VR-1140 is the reverse course of the VR-1139, and without knowing it, we had co-scheduled the two.

A breakdown in planning or an error in judgment didn't lead to this hairy situation. The sky simply is not that big, particularly at low altitudes. We could have just as easily encountered a bug-smasher piloted by a retiree. Luck is no substitute for a good visual scan.

Lt. Garriek flies with VAQ-134.



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Big Sky, Bigger Airliner

Why didn't I see it?

by LCdr. Phillip Gerard

"T

raffic ten o'clock!"

"Tally! Wow, that was close!"

We had been flying in our *Hawkeye*, equipped with the latest APS-145 radar, trying to find low-and-slow fliers and go-fast boats. It was daytime and CAVU to the moon. So why didn't I see that airliner? Why didn't someone in the back end give me a traffic call? I was disconcerted by my inability to complete a primary mission: see and avoid.

I estimated that our E-2C had passed 500 feet vertically and 1,000 feet laterally from that airliner, which are the limits imposed by OPNAVINST 3710.7. The problem was that I had avoided violating the limits through no action of my

own or that of my crew. Either the pilot of the airliner had clearance on his present course, or he had maneuvered (possibly spilling the passengers' coffee) to avoid me. I certainly didn't make any evasive maneuver; I never saw the other aircraft in time to increase our separation. My only correct action was to fly a VFR, semicircular pattern.

We had been flying a counter-narcotics mission under "due regard" in the Caribbean. We were monitoring the local control frequency. Shortly after our close encounter, we heard one of the pilots of the commercial jet ask the controller if there were any military aircraft operating in the area. It wasn't very hard to figure out we weren't regular, commercial traffic. The controller stated that he knew we were out there, but that we had switched off his frequency earlier when we went operational. The last position he had on us was nowhere near the airliner's position.

Because of our heading and the limited visibility from our cockpit, we didn't get a visual on the aircraft until our positions were very close. I determined that the near-miss occurred near an airway. During the rest of the flight, I remained more aware of where we were in relation to airways. I requested traffic calls from the back-end crew when our cockpit visibility was not optimal for crossing a particular airway.

I didn't think about the incident until the next day, when I talked to the pilot of that particular aircraft. He tracked me down, because he needed to get some facts for the internal incident report he was writing for his airline. I explained to him that we fly "due regard" in VMC and at VFR cruising altitudes, and that we didn't intend to get as close as we did. We had a very interesting conversation—airline pilots worry about military aircraft. We ended on a good note, and we each learned something new that day.

As the aircraft commander, I failed in several ways. I didn't pay enough attention to airline traffic in the area, and I relied too heavily on our ability to detect traffic (by using our radar) well before we saw it. Although I was aware of airways in my flight path, I didn't emphasize keeping my aircraft in the optimum position to see

airline traffic. Here are the lessons learned and operating procedures that I intend to apply in the future.

"Big sky, little plane." Even though we all know that we absolutely cannot rely on that theory, I proved it again.

In the United States, our air traffic control depends heavily on radar. Our system allows us to receive traffic calls on VFR aircraft not under ATC control. In other parts of the world, especially in international airspace, air traffic control by other countries is often procedural. Position reporting is king. In such environments, airliners don't get a heads-up on traffic that doesn't report. We have to avoid other aircraft.

Watch for those things that lead you to drop your guard or distract you. Flight planning must include the airway structure. Keep track of your flight path and recognize when you are flying near airways.

Keep your aircraft perpendicular to an airway when crossing it. If you can't cross on the perpendicular, get a radar picture from your crew or outside controller. When paralleling airways, allow a minimum of 5 NM separation.

Listen on the ATC frequency. You can gain some situational awareness from the position reports of airliners. Be extra vigilant near terminal areas.

Have a radar contract. In your brief, make someone responsible for own-ship flight following.

Most airliners under procedural control follow airways and make position reports to assist ATC. They are predictable, and we can use that predictability to avoid close calls.

Our military mission while flying in international airspace requires us to fly together with airliners. Those pilots usually have no idea of our flight path or intentions until either their eyeballs, or TCAS, alerts them to our presence. Since it is often not tactically feasible to fly under IFR, we need the flexibility that "due regard" flying affords us. We have to maintain separation from other aircraft and keep those airline pilots from spilling their customers' coffee.

LCdr. Gerard flies with VAW-117 and is that squadron's safety officer.

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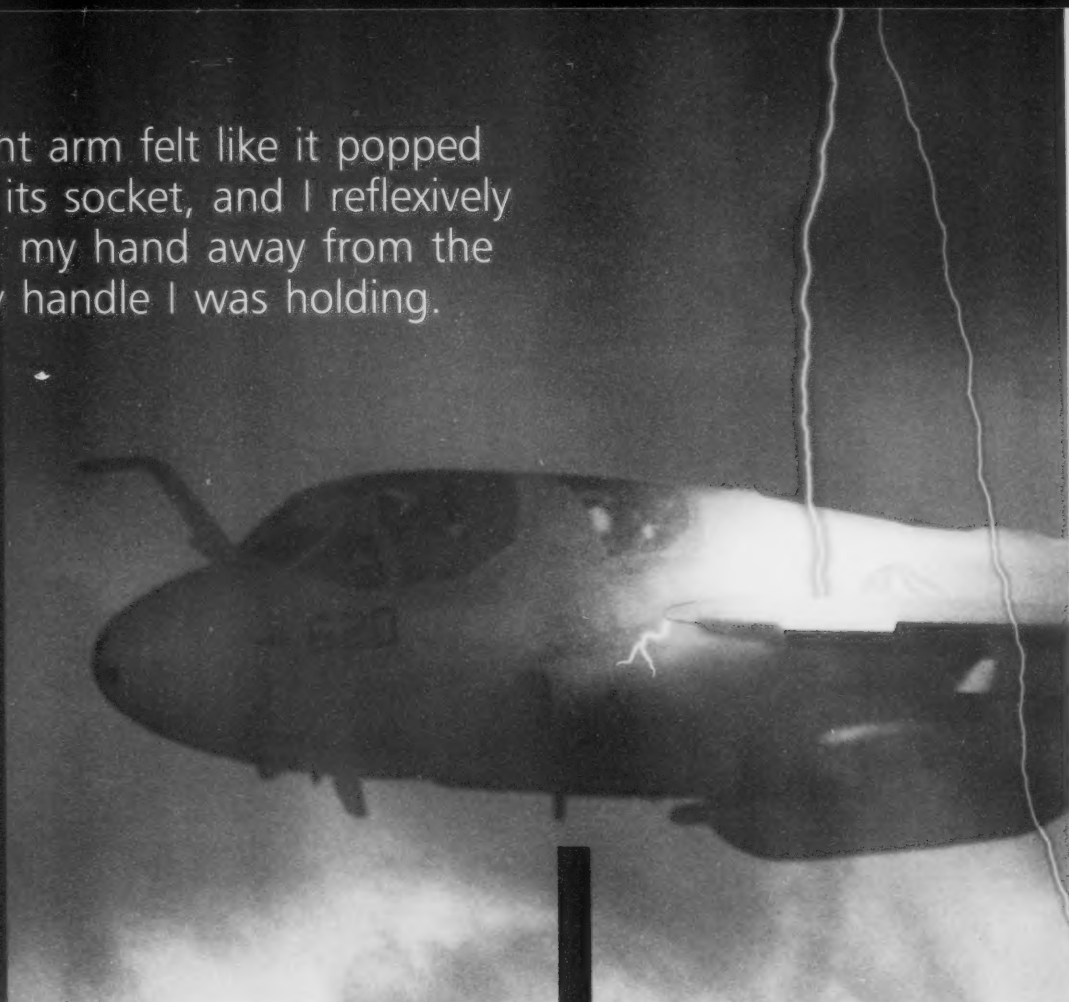
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Electro-Shock Therapy

by Lt. Dave Hankamer

It was the third week of a seemingly endless COMPTUEX, filled with GQs, cold showers, and extra-greasy sliders. Even though I was a nugget lieutenant junior grade on my first set of work-ups, I was starting to feel salty around the boat.

One day, our mission was another challenging SSC exercise, dedicated to observing vessels unlucky enough to be transiting the waters off Puerto Rico. Preparing for the noon launch, our crew thoroughly briefed the flight. We reviewed mission specifics, divert information, and boat emergencies. We grabbed a bite to eat, got dressed, and walked up to the flight deck to man our jet. It was a standard Caribbean afternoon, with thunderstorms building up around the boat as we taxied up to the catapult. The Air Boss wisely shifted the launch to Case II. My crew and I weren't worried—we'd seen this weather before, and we were just happy to go flying.

After the standard, mind-numbing cat stroke, we proceeded with the Case II departure. The weather wasn't getting better. There were plenty of holes in the clouds to climb VMC, but it took 10 minutes before we finally found an open area where we could see the ocean, and I reported to Bravo Sierra that we were up for their control. Naturally, all the surface contacts they wanted us to investigate were either directly underneath thunderstorms or outside our airspace limits, so we decided to knock off the SSC and call it a day.

We realized that the weather build-up had encircled our jet, leaving us in a 10-mile cylinder of clear air that was rapidly diminishing. There were significant radar returns (indicating heavy rainfall) in every direction. The clouds seemed to top out as high as 40,000 feet, and we decided climbing was not an option due to fuel constraints and our small working area. The pilot and I chose what we thought was the path of least resistance and proceeded back toward the boat. Our TACAN had completely dropped lock and communications with the boat had become sketchy at best. I could feel my saltiness oozing away. The rain slammed into the canopy, and our 45,000-pound Prowler was tossed around like a kite as we drove through the storm.

Then, as quickly as it had started, the rain stopped, and we emerged from the storm into an overcast layer that appeared bottomless. We made our way back to the boat, dodging angry yellow dots on the radar screen, and I told myself I'd never get into that situation again.


We checked in with marshal and complied with our holding instructions, only to find that the controllers aboard the boat had put the marshal stack right on the edge of another storm. Geez—thanks, guys! As we established ourselves on the marshal radial, I heard a tremendously loud crack and saw a bright flash. My right arm felt like it popped out of its socket, and I reflexively yanked my hand away from the canopy handle I was holding. The pilot felt the shock, too, and one of the back-seaters said, "I think we got hit by lightning!"

Excellent deduction, Mr. Holmes. With a shaky voice, I requested new marshal instructions, and we recovered uneventfully.

The mission and operating area had given us a false sense of security about the weather. The brief we'd received on the boat was standard for this exercise and didn't really give us any indication the storms would be so severe. Our so-called familiarity with the Caribbean atmosphere proved to be a big joke; instead of burying ourselves in the mission, we should have kept our eyes outside. Thunderstorms develop quickly, and nobody in our crew saw this problem coming until we were deep inside it.

We should have reviewed our turbulent-air-penetration procedures in greater detail before we tried to cross the storm. These procedures should be memorized like EPs: when you are transiting a storm, treat it as an emergency. Our crew completed most of the necessary steps, but we did them more as an afterthought, instead of reading them off like a checklist. We could have easily missed an important step and dug an even deeper hole.

Finally, we should never have accepted our marshal instructions, given the proximity of the thunderstorm. Our controllers were obviously unaware of the weather conditions along the marshal radial, and no one in any of the aircraft holding (including us) did anything to clue them in to the problem. After lightning hit our plane, I found that rocking the boat and getting the marshal stack moved wasn't a big deal. I think our crew more or less blindly accepted marshal's instructions as gospel, when we should have questioned them immediately. It turns out marshal knew nothing about the weather but did an excellent job of accommodating us when we told them where we needed to hold.

As for the lightning strike, I highly recommend keeping your hands away from metal objects during thunderstorms. Then again, those of you blessed with a little common sense probably knew that... 

Lt. Hankamer flies with VAQ-141.

Not Feeling Your Toes—Not a Good Sign

Lt. Matthew Munn

"Cabin altitude."
"Holding, eight K."

How many times has every Prowler aircrew had that conversation? They do it at least once a flight on the climb checks. How often do you check pressure after the aircraft passes through 10,000 feet MSL? My experience with the pressurization system has convinced me the answer needs to be, "More often."

The flight occurred on my NATOPS check in the FRS. We started climbing to altitude, heading across the Olympic Peninsula to hit the entry point for a low-level. As we climbed west, Seattle Center held us at 16,000 feet. Everything settled down, and we took our oxygen masks off, even though NATOPS forbids it. After we'd been there about two or three minutes, I was feeling light-headed. During the past few days I had flown my front-seat and back-seat NATOPS simulators, and had taken my NATOPS closed-book exam. I thought I was just tired. Then, from the back seat, I heard, "Check cabin altitude." I leaned over to check the gauge: 16,000 feet.

The pilot responded, "Check the cabin dump." The switch apparently had not been seated correctly, but when I reached down, it slid into position. Anyone who has conducted an FCF can picture what happened next. The cabin pressure went from 16,000 feet to 8,000 feet in about 10 to 15 seconds. During that time, everyone's primary focus was trying to keep up with the changing pressure, not flying the aircraft.

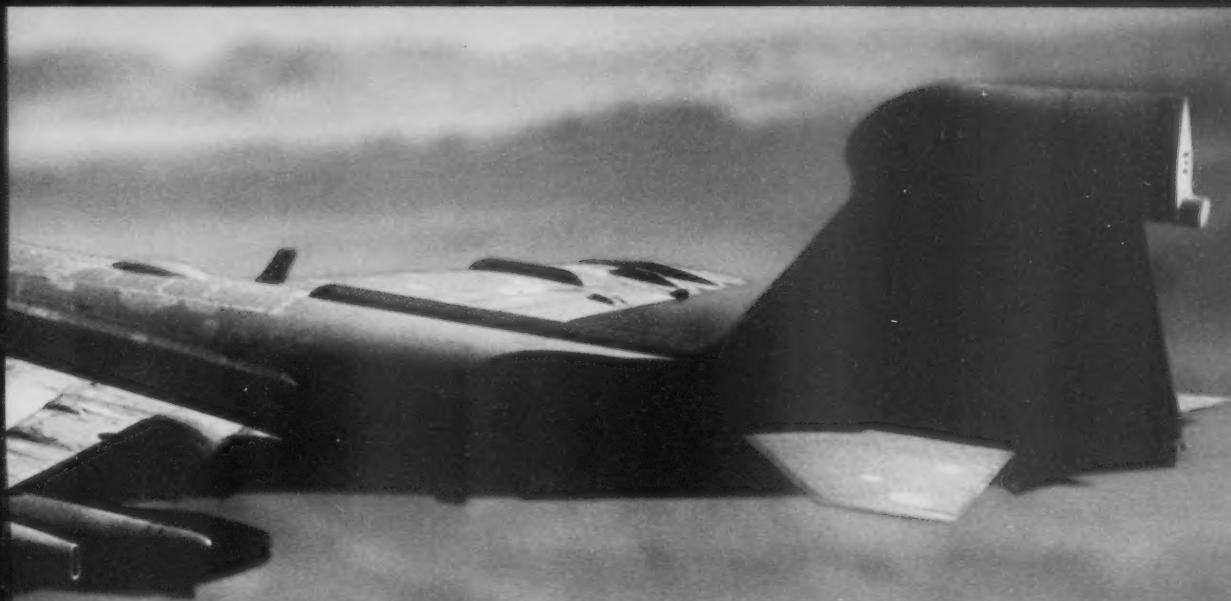
ECMO 2 reported a partial sinus block. After the pressure stabilized, she said it wasn't too bad, and we could continue onto the route. As we descended to 1,500

feet MSL, it became obvious the sinus block was bad; she couldn't clear anything and was in pain.

We found ourselves over the Pacific Ocean at 4,000 feet, unable to climb above the 8,000-foot Olympic Mountains that separated us from home. We would need to go all the way around the Olympic Peninsula to avoid making the backseater's sinus block worse. The flight had just begun, so gas was not a problem. We started to coordinate with Seattle Center to get clearances. We let them know we had a "physiological episode," couldn't proceed over the mountains, and required routing around the Olympic Mountains. We rarely fly along the northern edge of the Olympic Peninsula because of its proximity to Canadian airspace and lack of suitable nav aids.

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What had caused the cabin-pressure problem? Both the pilot and ECMO 1 had checked the cabin dump switch on pre-flight. We had checked the cabin altitude on the climb, and it was normal. We determined that although the cabin altitude was checked, we had done it passing 9,000 feet MSL. The cabin-pressure gauge, which normally fluctuates anywhere between 7,500 feet and 8,500 feet even without parallax being added in, appeared to be at 8,000 feet. If we had waited a few thousand feet, or



checked the gauge again, we would have caught the problem before it became serious.

Everyone had felt the initial effects of hypoxia, but nobody recognized the problem. Not until ECMO 3 lost feeling in his toes did he think to look at the cabin-altitude gauge. What if no one had caught the pressurization problem? We could be dead. What if we had been low on fuel and hadn't been able to take our circuitous route home at low altitude, with the nearest divert just as far away as home? We would have had to declare an emergency, climb, risk further injury to our squadronmate, and end up with a lot to explain once on deck. What if the confusion on our clearance from Seattle Center had become an issue? Flight violations, especially on NATOPS checks, are not normally smiled upon.

Three lessons. First, just because a switch looks right doesn't mean it is right. Touch all switches to ensure they are where they should be. Second, there is a reason NATOPS says not to take off your mask. If you must take it off briefly, double-check cabin altitude. More than 10,000 feet means oxygen on. Finally, every switch in the airplane is important, no matter how innocuous it may seem. For me, the cabin dump switch was something we checked on pre-start and didn't think about again. The switch does not appear again in normal checks and is in only one boldface EP ("Smoke and fumes/AC full hot").

Almost anything unchecked can cause problems. Since that flight, I have tried to envision the mishap report. Maybe they would have hypothesized it had been a pressurization problem. The end result still would have been the same: a perfectly good airplane flown into the water. 

Lt. Munn is an ECMO in VAQ-136.

Note: The aircrew involved in this "rapid recompression" incident were concerned that if they climbed, the stricken ECMO's symptoms would worsen. This concern was unfounded. In fact, they might have been able to resolve the situation by returning to altitude.

Sinus blocks occur because of problems in the passage from the sinus to the nose, usually from upper respiratory inflammation caused by colds or allergies. The symptoms almost always occur when the aircraft is descending. When the aircraft ascends, the sinus develops a positive pressure (relative to the outside environment); gases easily escape to equalize pressure, in spite of narrowed openings in the sinus. On descent, the sinuses develop a negative pressure, and the openings from the sinuses are easily "sucked" shut. Here is where valsalva comes into play; it pushes air through the closed opening and eliminates the "vacuum." If the pressure difference is too great, valsalva can't overcome the obstruction of the sinus opening, and you can't equalize the pressure. If you continue to descend with a blocked sinus, the relative vacuum in the bony cavity of the sinus begins to suck in serum and blood, sometimes ripping the mucus membranes from the cavity walls. The pain is extreme, and resulting infections are common.

Once a sinus blocks starts, a good way to keep it from getting worse is to return to higher altitude and start to valsalva. There should be no relative vacuum, and you should be able to pressurize the sinus. Then start a slow descent, performing frequent valsalva maneuvers to prevent further obstruction. — Cdr. Nick Webster, aeromedical analyst, Naval Safety Center

Note: Flying Your Prowler Is Not a Good Sign



abin altitude.”

“Holding, eight K.”

How many times has every Prowler aircrew had that conversation? They do it at least once a flight on the climb checks. How often do you check pressure after the aircraft passes through 10,000 feet MSL? My experience with the pressurization system has convinced me the answer needs to be, “More often.”

The flight occurred on my NATOPS check in the FRS. We started climbing to altitude, heading across the Olympic Peninsula to hit the entry point for a low-level. As we climbed west, Seattle Center held us at 16,000 feet. Everything settled down, and we took our oxygen masks off, even though NATOPS forbids it. After we’d been there about two or three minutes, I was feeling light-headed. During the past few days I had flown my front-seat and back-seat NATOPS simulators, and had taken my NATOPS closed-book exam. I thought I was just tired. Then, from the back seat, I heard, “Check cabin altitude.” I leaned over to check the gauge: 16,000 feet.

The pilot responded, “Check the cabin dump.” The switch apparently had not been seated correctly, but when I reached down, it slid into position. Anyone who has conducted an FCF can picture what happened next. The cabin pressure went from 16,000 feet to 8,000 feet in about 10 to 15 seconds. During that time, everyone’s primary focus was trying to keep up with the changing pressure, not flying the aircraft.

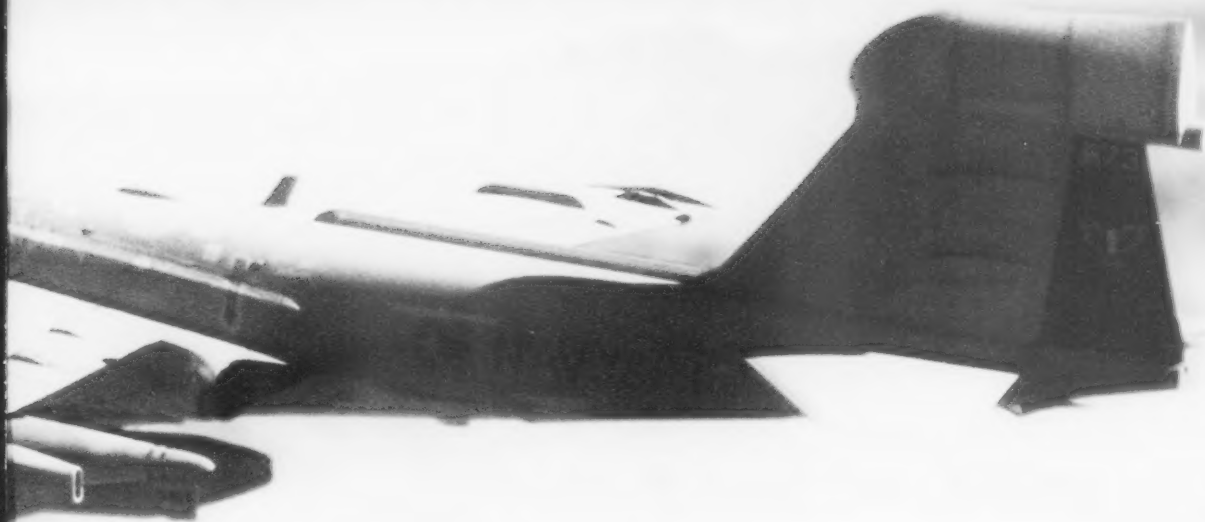
ECMO 2 reported a partial sinus block. After the pressure stabilized, she said it wasn’t too bad, and we could continue onto the route. As we descended to 1,500

feet MSL, it became obvious the sinus block was bad; she couldn’t clear anything and was in pain.

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very naval aviator loves a good deal, and mine was shaping up to be great. The squadron was sending a detachment to Midland, Texas, to grab lots of good flying weather and knock out a bunch of X's.

The plan was for my form partner and I to fly Form-1 in the local Corpus Christi area, fly form to Midland (with a refueling stop halfway), and finish up the flight with Form-2 in the Midland area. We completed our preflight and took off uneventfully into a sunny sky with scattered clouds. We completed some basic formation maneuvers in the local Corpus Christi area and started our formation transit to Midland. Things started going awry when we checked the weather approaching our halfway refueling stop. Our refueling airfield was below minimums.

The instructors did some consulting over squadron common, and we checked the weather at Midland and at Navy Corpus. Both ends of our flight were reporting weather above minimums, but not by much and with no forecasted improvement. We were at a crossroad: turn back or press on.

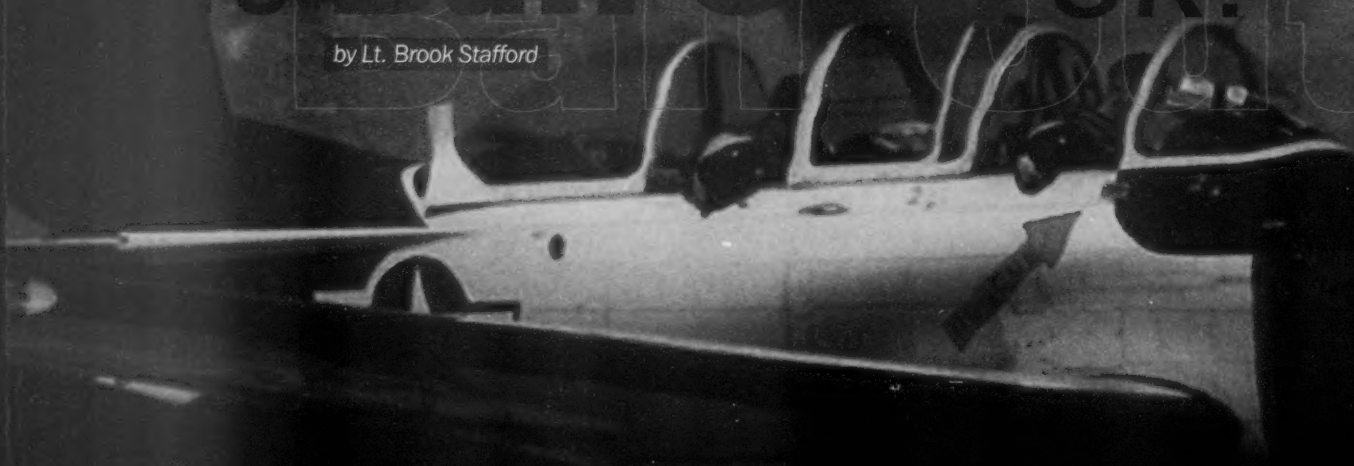
Both IPs decided we had enough fuel to make it to Midland, so we pressed on.

The training portion of the flight was cancelled, and the IPs took controls to continue our transit. The clouds continued to build, and we had to increase our altitude in 1,000-foot intervals to stay VFR. We donned our oxygen masks when we were forced above 10,000 feet. Reaching 14,000 feet, with no weather improvement forecasted at Midland, we cancelled VFR and received an IFR clearance from ATC. We were in and out of the clouds, and the instructor was keeping our aircraft tight on lead. We both were keeping real close watch on the fuel and our burn rate. The numbers were getting tighter and tighter.

ATC had been vectoring us toward Midland, but the airspace was really busy, and ATC was predicting a delay in the terminal area because of traffic. We had a good TACAN lock on Midland, and at about 90 nautical miles out, with low fuel, we realized we couldn't afford any delays in ATC handling. Both aircraft declared emergency fuel. The unlucky controller on watch that day took it in stride and gave us more

Just Be Ready to Turn Out, OK?

by Lt. Brook Stafford



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We continued getting vectors to the field, and the fuel ticked down. The instructor ordered me to check my parachute and ensure I would be ready to hit the silk if we flamed out. At this point, we were still 40 miles out, and our fuel was at the squadron minimums for landing. ATC vectored us for an instrument approach, but, looking at the approach plate and the chart, we determined that the route to the IAF would add distance, and we couldn't accept it. We were running out of options and fuel, so we had to accept a section, localizer, back-course approach to the field. We broke out at about 300 feet, glad that the airport was right in front of us. Tower cleared us to land on any runway, and we followed lead to an uneventful landing on the off-duty runway.

As we taxied off the runway and our hearts resumed beating, we checked the fuel. We had about 50 pounds on each side, far less than the squadron SOP minimum of 120 pounds per side. After we shut down and exited the aircraft, the

instructor remarked, "That was the stupidest thing I have ever done in a T-34."

A police car and a fire truck rolled up. I asked if they were just checking on things, and the IP said they probably were coming to arrest him. They didn't—they just had him fill out the routine paperwork required for all emergency landings. The debrief was rather short and to the point. I continued through the syllabus and finished forms several days later.

I learned that every flight, even routine training, contains risks. Had I been more assertive and urged the instructor not to push our fuel, we would have landed short of our destination but with plenty of gas. Next time, I'll be more involved in the decision-making instead of just being along for the ride.

Lt. Stafford flies with HSL-48 and was deployed in the Mediterranean aboard USS *Anzio* (CG-68) when he submitted this article.

Analyst's comments: The entire aviation community, including the military, continues to produce human-error-mishap rates of nearly 80 percent (67 percent being aircrew). This story describes a common error that is often cited as contributing to mishaps: being along for the ride. Each member of a crew is exactly that—a member—and as such is responsible for participating in the decision-making process, regardless of seniority, position, or experience. OPNAVINST 3710.7 and FAA regulations both make the aircraft commander responsible for the safe conduct of flight. That doesn't mean subordinate crew members aren't part of the process. Help the aircraft commander—communicate concerns, information and options. Apply risk-management skills and contribute to making informed decisions.

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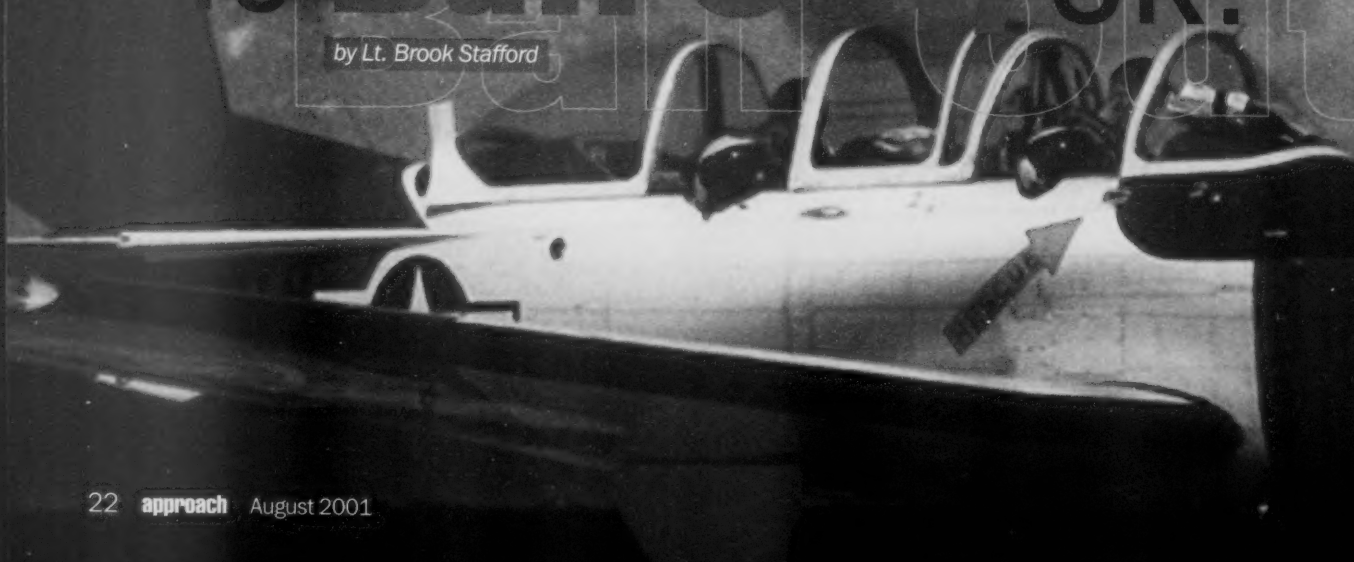
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ORM *Corner*

Which Way Is Up?

by Lt. Scott Penland

The night began like many other routine nights in the Gulf but ended with a lesson in ORM. Current tasking had our LAMPS SH-60B routinely flying three bags a night. Well into our second week of this tasking, my circadian rhythm had finally adjusted, and I was feeling comfortable flying two bags a night.

After our brief in combat, the OinC said he wanted me to brief and run the flight as I saw fit. I finished the crew brief and asked for questions. The OinC added a few pearls of wisdom, and then told us we'd be descending to 200 feet in order to VID and rig all surface contacts. After completing our standard ORM brief, the OinC briefed the approach and (to avoid confusion in the aircraft) crew responsibilities. The maneuver seemed like most other nighttime descents, except that we were rigging contacts in the Gulf. The flying pilot would be responsible for maintaining visual separation from the contact, operating the searchlight, and crosschecking the flight instruments. The other pilot would be responsible

for maintaining an instrument scan and copying information from the crewman. The crewman was to rig all contacts and pass the information to the nonflying pilot. After the brief and our ORM discussion, we felt comfortable enough to attempt this new maneuver.

Thirty minutes into the flight, we came across our first contact. It was a typical, group III tanker, well-lit and moving at about 15 knots. The OinC was on the controls, flying right seat, when

ORM Corner
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Please send your questions, comments or recommendations to Cdr. John Anderson. Cdr. Anderson's address is: Code 11, Naval Safety Center, 375 A St., Norfolk, VA 23511-4299. (757) 444-3520, ext. 7203 (DSN-564). E-mail: janderson@safetycenter.navy.mil



he began his descent. He told the crewman he was bringing the contact down the right side of the aircraft. At 200 feet, we leveled off and engaged the RADALT hold. The crewman rigged the contact while I passed the contact's information to our ASTAC. After completing our first 200-foot VID, the crew felt comfortable with the entire approach.

On our way to a new contact, visibility decreased to just more than a mile, and the hazy

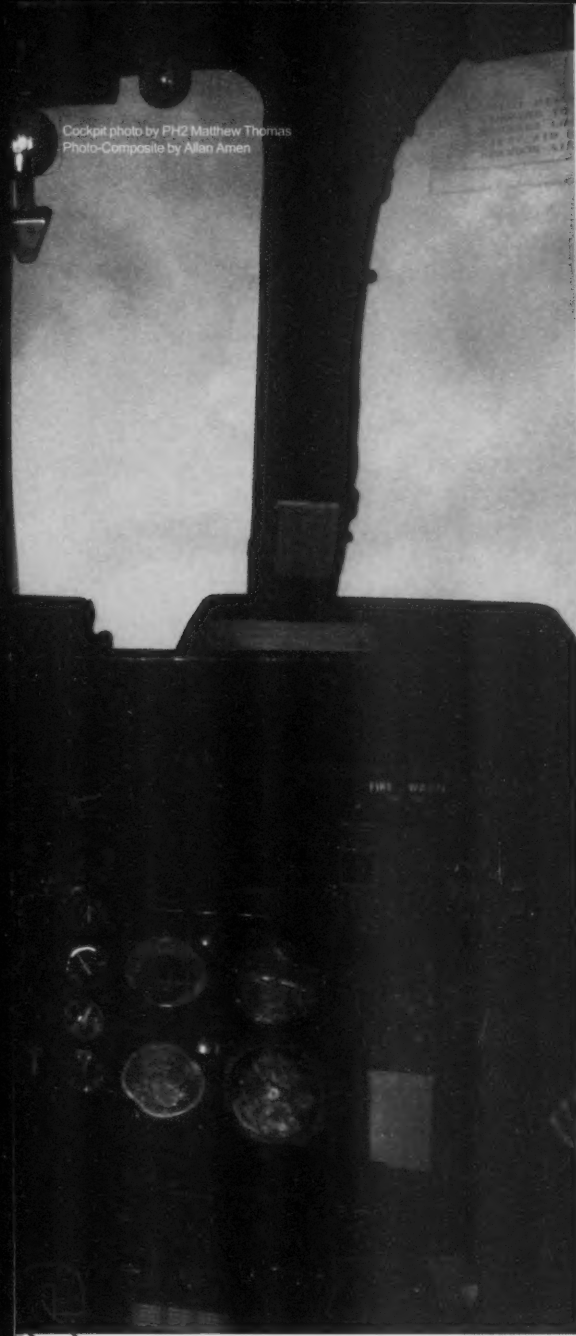
horizon had all but disappeared. The OinC passed control of the aircraft over to me and said I could take the next approach. As the new contact came into sight, we completed the procedures for descending IMC at night. Flying from the left seat, I decided to take the ship down the left side and began my descent to 200 feet. I soon developed a mild case of vertigo. As I leveled off at 200 feet, I informed the crew. The OinC asked if I was OK, said that he was

Continued on page 33



Is This How It Works in

LCdr. Christopher Rodeman



Cockpit photo by PH2 Matthew Thomas
Photo-Composite by Allan Amen

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The plan seemed logical: Fly all six of the squadron's SH-3s to NAS Norfolk, where they would be staged for the upcoming deployment. The ship was scheduled to deploy in one week, only two days after Christmas. The thought of doing turn-around inspections and flight planning on Christmas Day, not to mention a six-hour helicopter flight with Christmas dinner still in our bellies, had prompted the skipper's plan to preposition the squadron's aircraft and equipment. All we had to do was fly the helicopters up the East Coast and return the same day on a C-9.

Two days before this flight, I had flown my FRS NATOPS check. The day after that, I'd traded the golden bars of an ensign for the equally salt-free silver bars of a lieutenant (junior grade). Twelve hours before the flight, I had arrived on the quarterdeck of my first fleet squadron to discover a flurry of activity. No one had much time to talk to a confused-looking new guy, but I did manage to ascertain that I should return at 0500 to brief for a flight to Norfolk. That seemed well within my powers.

I was to be the copilot in Dash 6. My HAC, whom I hadn't met, was a senior lieutenant on his second fleet tour. The flight was planned as a VFR, six-helicopter formation flight, with one fuel stop. My first hint that this plan would change came from the AG who came to brief us about the weather en route. The entire East Coast was a mess: multiple overcast layers, rain showers, and even a few thunderstorms. It was obvious we would not be able to get on top of this goo, because most helicopters have a ceiling of around 10,000 feet, and no one wanted to spend six hours flying through it. Therefore, the skipper decided we would use the time-honored helicopter tactic of flying as low as allowed by law, until forced by weather to come up with another plan.

The first leg was bumpy and tiresome, but we managed to stay in a reasonable facsimile of a formation. Approaching our first fuel stop, the

the Fleet?

weather was getting worse. While the aircraft were being refueled, the skipper decided that we would break up and file six individual IFR flight plans. This wise decision forced my HAC to share with the flight lead a piece of information we had kept to ourselves: Our aircraft had no operable navigation devices. The TACAN, ADF and even the Doppler had all died en route! We decided that Dash 5 and Dash 6 would file as an IFR formation flight.

The next two hours would constitute the scariest flight of my short aviation career. Within minutes of takeoff, we were between overcast layers, dodging clouds, and flying a very tight formation to avoid losing sight of our lead. Before long, we were not between clouds, we were in them. I sat in petrified silence, as my aircraft commander inched our helicopter closer and closer to the lead. As the clouds got thicker, the lead became harder and harder to see. Despite the fact that we were separated by only one rotor diameter, the aircraft in front of us disappeared several times for a moment or two, and the lead reappeared before we had time to react. On one occasion, we thought we had lost them for good. My HAC yanked back on the cyclic and slowed our airspeed, but when the lead reappeared 30 seconds later, we charged back into our little formation.

I sat in petrified silence, as my aircraft commander inched our helicopter closer and closer to the lead.


At some point, my HAC said, "I have no intention of spending Christmas in Mayberry, North Carolina," or words to that effect. His chief concern was that if we broke off from the lead and asked for separate IFR handling, the controller might ask us to navigate on a vector airway defined by a TACAN radial, especially since that was the route for which our flight had filed. Then we'd have to admit to ATC that we had no operable navigation devices, and then they might vector us to the nearest VMC airfield.

That's when the light came on in my head: This was not the way all flights were conducted in the fleet. This was, instead, the result of a bad decision. We were going to stay in this precarious formation no matter what else happened.

Visibility continued to decrease, and we continued to close what little distance remained between our main rotor and the lead's tail rotor. From this distance, I could easily make out a look of concern on the face of the squadron ops officer, who was sitting in the copilot seat of the lead aircraft. Every minute or two, he would turn around and stare at us, as if to say, "Please be careful with my tail rotor."

I believe we were at about half-a-rotor diameter when the lead finally disappeared for good. At the beginning of any inadvertent IMC dispersal, there's a moment of hesitation, as you stare into the goo and wonder, "Are they coming back?" At half-a-rotor diameter, this moment seemed to last forever. As the remainder of my seat cushion disappeared, my HAC aggressively pulled back on the cyclic. This time we even executed a turn. Soon we were flying around blindly in a cloud. As my HAC tried to contact ATC and explain our situation, he spotted a sucker hole leading to terra firma. After a lengthy corkscrew descent, we found ourselves at about 300 feet, over a farmer's field, still negotiating with ATC.

Strangely, I can't remember anything about the rest of the flight. I do know that during all the excitement, I had said absolutely nothing. In fact, that was my total contribution to the flight. I was the brand new pilot, fresh from the FRS. Whether implied or inferred, my role in the crew was to be quiet and learn how things were done in the fleet. Unfortunately, that is exactly what I did. Deep down, I knew it was my responsibility to tell the HAC that I was uncomfortable with his actions.

Aircrew coordination training was not yet the comprehensive program that it is today. Nonetheless, I'm certain that someone in the training command had told me that "rank doesn't exist in the cockpit," and that a junior copilot should not be afraid to disagree with a seasoned aircraft commander. The HAC didn't ask my opinion during this flight, but I had no reason to believe he would ignore it. I should have spoken up, but instead, I sat on my hands. Fortunately, my first flight in the fleet did not become my last. 

LCdr. Rodeman flies with HS-14, and was the safety officer when he wrote this article.

Seeing the Desert at 70 Feet

by Lt. Jeffrey Sowinski

It was another beautiful day in May in Fallon, Nev., and I was looking forward to my flight in an FA-18C. The East Coast Hornet FRS was in town for a strike detachment, and my mission was a Low Altitude Training (LAT) chase on a Cat. I replacement pilot. This flight is the first one where a Cat. I alone is in a jet at 200 feet. The IP runs the RP through LAT maneuvers and acts as a safety-of-flight observer.

About a third of the way through the LAT hop, I prompted the RP to do a 30-degree turning oblique jink (TOJ), with a three-second delay at the vertical. The maneuver starts at 420 knots; you bring the nose up 30 degrees while turning, delay for three seconds, point the nose back at the ground, and then use LAT recovery rules to establish yourself at 200 feet again.

We were working the Dixie Valley LAT area, which is flat with mountain ranges on either side boxing the airspace. Being the above-average IP that I am, I was trying to keep the RP's nose tracking down the valley during these maneuvers by setting him up offset into the direction of the valley floor. I've learned that no matter how you set up an RP, you always can count on a new student pointing their nose at any rising terrain. This happens because students concentrate so hard on the maneuver and not the airspace. The bucket gets full, and that's exactly what happened in this particular case.

As the RP was intercepting his LAT recovery rules, I was spending more time than usual looking at his aircraft because of the rising terrain in front of him. I was trying to time it so that as he leveled off from the TOJ, I would give him a quick heading-change south before the mountain range became a factor. At that very moment, Betty (the Hornet voice-alert system) yelled, "Pull up! Pull up!" and I saw the big recovery arrow in the HUD. I must have been entirely too fixated on the RP, because I hadn't noticed that my radalt had stopped working. My altimeter in the HUD was going back and forth between barometric and radalt altitude. My radalt warning, set at 180 feet, wasn't working, either. I shouted a hearty expletive as I realized we were at about 100 feet, in a 1.5-degree, nose-down attitude and in slightly rising terrain.


I yanked the stick in the direction of the arrow (my lowest altitude was about 70 feet). The wonderful desert

FA-18C photo by Matthew J. Thomas
Photo-composite by Patricia Eaton



flora started looking huge. I hate to think what would have happened if the Hornet's Ground Proximity Warning System (GPWS) hadn't given me that hey-knucklehead-you're-about-to-hit-the-ground message.

As I understood GPWS, the system enters a coast mode if your radalt stops working. Upon further review of the 13C grey book, I confirmed that this was the case. While in the coast mode, GPWS calculates a best estimate of the aircraft's current height above the ground, using barometrically damped inertial altitude and the terrain elevation measured when the radalt failed. Coast mode is available for a maximum of two minutes, and only if the estimated terrain slope is less than or equal to two degrees. Trailing the RP by a half-mile, I was fortunate I wasn't flying over terrain with a slope of more than two degrees.

Mission-crosscheck times are there for a reason. No matter what the situation, obey them. Also, if a student puts you in a position you do not like, call "Knock it off," and set up the maneuver again. These flights are intense, and as the IP, watching your student's altitude and nose position while flying your own aircraft can get you in an extremely hazardous situation very quickly. I always thought GPWS was a nuisance, especially in the landing configuration, but now, after flirting with the ground at 420 knots without a working radalt, I am a true believer in the system. 

Lt. Sowinski flies with VFA-106.

AIRSHOW ATTACK

by LtCol. Peyton DeHart, USMCR

Airshow season is our chance to show the American public the great machines they have bought for us. It is an even better opportunity to show them *what great people we, who fly those machines, are.* Though the Cobra usually doesn't perform flying demonstrations, I remember one particular airshow when the reins had been loosened, allowing a simulated assault to take place.

Imagine my giddy response when it became known there would be pyrotechnics on the ground to simulate the awesome destruction the Snake can inflict! A hundred yards of blasting caps, strung together with det cord, approximating the cyclic rate of fire of the 20mm gun mounted on our nose. Oh joy! Oh noise!

The Cobra chosen to fly to the show was pristine, with a new paint job and a recently changed engine. Since rework, it had flown only a test hop and the hour-long ferry flight to the show.

It was a balmy Spring day. Nice older ladies working the concession stands wore T-shirts that read "GRITS" on the front (the explanation "Girls Raised In The South" was printed on the back). I was sure they would be impressed by my performance.

Flight brief, pyro brief, safety brief, wing walkers, biplane acts... we endured all sorts of waiting until the appointed hour when we could spin up and rule the skies in front of the awestruck crowd. At last, it was show time. A Huey carrying troops cranked and launched, we cranked and launched. They flew to their holding spot, we flew to ours. The narrator explained the scenario to the crowd before getting on the radio to say, "You're on!"

Our script had the Cobra lead the way by swooping from a lofty perch, in a high-angle dive, down to a spot off


to the side of the demolition pit. When the helo roared past, the det cord would light off the string of explosions. It was the only pyro at the show, and I would get it all! I rolled the Cobra on its side and then let the nose fall through the horizon until we were diving at 30 degrees nose down. The Cobra built up speed and started to rattle and shake. More speed, the ground rushing upwards, tracking, tracking...

You remember we had a new engine? Halfway down the chute, mere seconds before blasting the target to smithereens, the engine chip light lit up. Son of a... well, getting a chip light was not altogether unexpected. We all know that chip lights are common to new engines, just the bearings wearing in. It would just be some fuzz on the chip detector that could be wiped off. Glory or chip detector? Glory or chip detector?

They always say, "The show must go on!"

Wait... *air show.* This wasn't real. I raised the nose slightly to break the rate of descent and turned away from the crowd, flaring to land on a taxiway outside of eyesight and earshot. The swift-thinking narrator ad libbed that "stiff resistance on the ground" had shot down the Cobra, and the Huey was inbound to save the day. The Huey hove into view and flared to land in order to disgorge the ground guys. The door gunner "fired" his M-60, and the string of blasting caps erupted in front of the gasping crowd. Much applause, much adulation. Oh, the shame, the inhumanity!

After shutdown, the chip detector was pulled, cleaned (it had some metal fuzz from new bearings getting worn in), and reinstalled. The engine was good to go and has run fine since then.

Hey, it was only a show. 

LtCol. DeHart is with the 4th Marine Aircraft Wing, FMF.



Re: "Plenty of Skippers...Not Much Fuel" (April 2001)

Lt. Churchill covers the incident precisely, not missing anything. He even brought back memories of when I was on USS *Theodore Roosevelt* with six Marine CH-53s, being put in a starboard "D" until the jets landed and being told that there was plenty of water to ditch a helo that was low on fuel. One of the main reasons this crew pushed on as they did was because they had the three COs on board. The article starts by saying, "I thought it was strange, but since we were dealing with ships' COs, I figured the ships would stay close enough to the carrier." When they are flying to another ship, they talk to their ship and find out which way they are heading. Since they are low on fuel and had not contacted the ship they are heading to, the HAC said not to go any faster, since they have their CO, and are going to be tight on fuel. The flight went on, they made all their stops and they got back to their ship. During the debrief, again they focused on the COs, stating they "Should have been more vocal with the people in CIC about closing the distance between our ships and the

carrier. After all, we were going to be picking up the COs of all three that were ultimately going to be together."

I know the importance of COs, but I don't feel it should matter who's on board when dealing with the lives of passengers on naval aircraft. I think this article shows extremely close "fuel low" limitations. Couldn't they have taken on more fuel? If so, why didn't they? After all, they were briefed that there would be no fuel on the carrier. I think the crew depended too much on the passengers they were carrying to allow them to get additional fuel if needed. Also, what about the carrier deck evolution; was that not briefed? Sometimes flight decks get clobbered. Don't get low on fuel—fuel starvation over water means you are going to get wet. Don't let the window of opportunity be the one you need to get out of in an emergency situation.

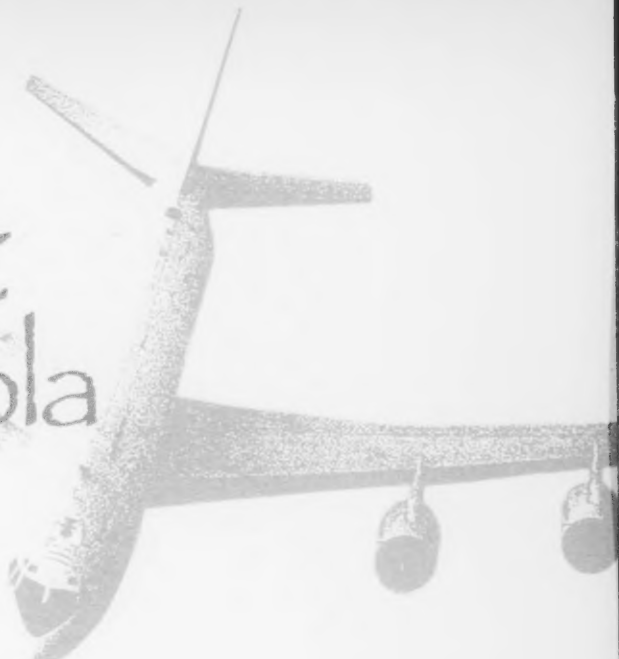
MGySgt. J.L. McKay
HMM-266 Maintenance Chief

On the Cat

Coming Attractions for September

- My Head, the Pressure Chamber
- The Tokyo Shuffle
- Fog, Icebergs, and an ELVA—Who Needs ORM?

Snowing at 1,200 Feet Over Pensacola



by Lt. Marc Overman

There we were, about to land at another glorious, random stop and assume the backup. The pilot was in the left seat, and I was in the right seat. The aircraft was descending from 2,000 feet to 1,200 feet on the 12 DME arc at NAS Pensacola.

As the pilot pushed up the power to level off, a very audible bang shook up the aircraft. I grabbed the yoke and looked at the engine stack. My first instinct was that a compressor had stalled in one of the engines, and I was waiting for secondary indications. The engines looked good, though. A moment later, everyone's ears told the story of what was happening. Even with the aircraft at 1,200 feet, the loss of cabin pressure cleared everyone's ears. We also heard a low, deep rumble.

The ever-ready ACO-T [airborne communications officer (trainee)] reported, "Flight, Comm, we have a problem." The flight engineer reported that we had lost all bleed air to the ACM. If we had lost a duct, where was it? Was it on the wing, and was hot bleed air blowing on the fuel tank? Was it in the aircraft structure? Or was it inside the aircraft, damaging all the aircraft avionics?


My thoughts were interrupted by the ACO clarifying his earlier statement, saying it was "snowing" in Comm. This phenomenon perplexed me. Using the PA, I announced the problem. I didn't call for oxygen masks, because we were at such a low altitude. The FE, in the meantime, was shutting off the bleed-air valves for each

engine, thereby isolating the air to the ducts. Once he had done that, the sound and the "snow" subsided.

Assessing the situation was now straightforward. We broke off the approach, and told NAS Pensacola we needed to fly direct to the field for a visual full stop. We notified them that we had lost pressure and required no assistance. We had four good engines, would be at landing weight on final, and may have some damage to the aircraft. Checking our configuration, we decided to continue to the full stop.

Coming down on final, everyone started to cough due to the "snow" fibers, which were actually insulation from the duct floating in the air. Double-checking our clearance to land, we made an uneventful full stop.

We discovered that the stainless-steel crossover duct for the port engines had shredded in the aft part of the forward lower lobe. Further investigation showed that a tap-off valve, which was attached to the duct, had separated during the blowout. This allowed it to swing down and strike the forward outflow valve and another fiberglass duct, which in turn sheared off the top of the vacuum pump. The valve had closed as advertised, keeping the rest of the pressure we had in the cabin relatively stable. The other fiberglass duct came away with a 4-by-2-inch dent.

The E-6 airframe had never before produced this sort of emergency. In this case, our crew made up for the lack of written procedures by acting calmly and competently. 

Lt. Overman is the avionics division officer with VQ-3.

backing me up on the instruments, and told me he would take the controls if necessary.

I said, "I'm OK." The contact was just on my left at 11 o'clock. I switched from my instrument scan to a visual one in order to maintain separation.

The crewman was having trouble rigging the contact from his point of view, so the OinC told me to bring the nose of the helicopter to the right to give the crewman a better aspect. The nose came to the right, and my sight picture changed dramatically as the bright lights flooded my vision. The contact was now at the nine o'clock position, drifting aft and then disappearing from my field of view. I was left staring into a void. Without visual references, my mild case of vertigo turned into a major case of the leans. I reverted back to an instrument scan but was having a hard time controlling the aircraft.

As we descended to 150 feet, the OinC realized my predicament and came on the controls. However, flying cross-cockpit, he couldn't see the merchant. The crewman

reported that the bow of the contact was still at our nine o'clock but was about to pass underneath us. Passing through 120 feet, the OinC stated that he had vertigo, too; he pulled in power and climbed to 500 feet. He then confessed that flying cross-cockpit had induced vertigo, but he was able to maneuver us away from danger.

We continued flying at 500 feet, straight and level, until the entire crew was able to get rid of their vertigo. After our pulses dropped back into the normal range, we decided against rigging any more contacts and remained at 500 feet for the rest of the flight.

After the flight, I realized we had used ORM in the cockpit. As problems developed during the flight, this process proved invaluable. After our scare, we reassessed the hazards and concluded the mission requirements did not outweigh the risks involved on that particular night. ORM isn't a process you complete in the brief and then forget. It can be especially important during the flight, too.

Lt. Penland flies with HSL-45, Det. 6.

What are the chances?

In 1,000 hours of flying fighter/attack:

- Your chance of crashing is - 1 in 25
- Your chance of ejecting is - 1 in 40
- Your chance of dying is - 1 in 71
- If you eject, your chance of dying is - 1 in 7

In 1,000 hours of flying helicopters:

- Your chance of crashing is - 1 in 59
- Your chance of dying is - 1 in 177

In contrast:

- Your chance of winning the Virginia Lottery is - 1 in 14,000,000 (13,983,816 - to be exact)
- In a year: your chance of dying due to homicide is - 1 in 26,000
- Illness is - 1 in 11,000
- Suicide is - 1 in 8,000
- Off-duty mishap is - 1 in 4,000

Manage
your
risk

Ready Room Gouge

If you push the stick forward, the houses get bigger. If you pull the stick back, they get smaller. If you keep pulling the stick all the way back, then they get bigger again.

www.safetycenter.navy.mil

Photos by Matthew Thomas
Composited by Allan Amen



